

WHAT IS CLAIMED IS:

1. A method of performing imprint lithography of a surface of a workpiece including a substrate and a layer of an imprintable resist material, wherein a stamper/imprinter comprised of a material having thermal expansion characteristics different from the material of said substrate is utilized for embossing a desired pattern in the workpiece surface, the method comprising conducting said embossing at room temperature, whereby deleterious effects arising from differences in thermal expansion/contraction characteristics of the stamper/imprinter and workpiece are avoided.
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2. The method according to claim 1, wherein said stamper/imprinter comprises:
- (a) a support body; and
  - (b) an imprinting surface having a negative image of said desired
- 5 pattern formed therein.
3. The method according to claim 2, wherein:
- said support body (a) and said imprinting surface (b) are composed of the same material.
4. The method according to claim 3, wherein:
- said support body (a) and said imprinting surface (b) are composed of a metal material.
5. The method according to claim 4, wherein:
- said metal material is nickel (Ni).
6. The method according to claim 2, wherein:
- said support body (a) and said imprinting surface (b) are composed of different materials.

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7. The method according to claim 6, wherein:  
said imprinting surface (b) is made of silicon (Si).

8. The method according to claim 7, wherein:  
said support body (a) is made of a metal.

9. The method according to claim 2, wherein:  
said imprinting surface (b) has a negative image of a servo pattern for a recording medium formed therein.

10. The method according to claim 9, wherein:  
said imprinting surface (b) has formed therein a negative image of a servo pattern for a disk-shaped magnetic recording medium.

11. The method according to claim 10, wherein said workpiece includes a substrate for a hard disk magnetic recording medium, said substrate having a surface and comprising a material selected from the group consisting of glass, ceramics, glass-ceramics composites, polymers, metals, and metal alloys.

12. The method according to claim 11, wherein said workpiece further includes said layer of imprintable resist material overlying said substrate surface and presenting an exposed upper surface, and said servo pattern is embossed at room temperature in said exposed upper surface of said layer of resist material to  
5 form a servo-patterned resist layer.

13. The method according to claim 12, wherein the thickness of said layer of resist material is less than the depth of the features of said negative image of said servo pattern of said imprinting surface (b).

14. The method according to claim 12, further comprising selectively forming said servo pattern in said hard disk substrate material utilizing said servo-patterned resist layer as an etch mask or irradiation mask.

15. The method according to claim 14, further comprising selectively removing said servo-patterned resist layer subsequent to said forming of said servo pattern in said hard disk substrate material.

16. The method according to claim 12, wherein said room temperature embossing of said servo pattern in said layer of resist material comprises utilizing a press for high pressure urging of said imprinting surface of said stamper/imprinter against said exposed upper surface of said layer of resist  
5 material.

17. A method of forming a servo pattern in the surface of a substrate for a magnetic recording medium, comprising the steps of:

(a) providing a workpiece including a substrate for a hard disk magnetic recording medium and a layer of an imprintable resist material  
5 overlying said substrate and having an exposed upper surface;

(b) providing a stamper/imprinter including an imprinting surface having a negative image of said servo pattern formed therein; and

(c) utilizing said stamper/imprinter for performing room temperature embossing of said exposed upper surface of said layer of resist material with said  
10 negative image of said servo pattern.

18. The method according to claim 17, further comprising the steps of:

(d) selectively forming said servo pattern in said hard disk substrate utilizing the servo-patterned layer of resist material as an etch mask or irradiation mask; and

5 (e) selectively removing said servo-patterned layer of resist material subsequent to performing step (d).

19. The method according to claim 17, wherein:

step (a) comprises providing a disk-shaped substrate comprising a material selected from the group consisting of glass, ceramics, glass-ceramics composites, polymers, metals, and metal alloys; and

- 5        step (b) comprises providing a stamper/imprinter wherein at least said imprinting surface is comprised of a metal material.

20.     The method according to claim 19, wherein:

step (a) comprises providing a disk-shaped substrate comprised of glass or NiP-coated Al; and

- 5        step (b) comprises providing a stamper/imprinter including an imprinting surface comprised of Ni.

21.     The method according to claim 17, wherein:

step (a) comprises providing a workpiece including a resist layer having a thickness less than the depth of the features of said negative image of said servo pattern in said imprinting surface of said imprinter/stamper.

22.     The method according to claim 17, wherein:

- 5        step (c) comprises performing room temperature embossing of said servo pattern utilizing a press for high pressure urging of said imprinting surface of said stamper/imprinter against said exposed upper surface of said layer of resist material.

23.     A substrate for a hard disk magnetic recording medium, comprising a servo pattern formed in a surface thereof by a process comprising room temperature embossing of said servo pattern in a layer of an imprintable resist material overlying said substrate surface.